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# Review between Tobin's Q with performance Evaluation Scale Based Accounting and Marketing Information in Accepted Companies in Tehran Stock Exchange

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## ABSTRACT

Investigating the performance of companies is one of the most important topics of interest to managers, investors, creditors and other interested parties; and the results of that form the basis of many decisions, so that any group of stakeholders seek to maximize their benefits. Evaluating the performance of companies is of utmost importance in the economic decision making and there are various criteria and methods employed to evaluate the performance of companies; hence, due to some shortcomings in the accounting information provided to evaluate the performance of companies, using some criteria has been taken into more consideration. Tobin's Q is one of the criteria used in this regard. The present research aims to investigate the relationship between Tobin's Q and performance evaluation criteria based on accounting and market information in companies listed on the Tehran Stock Exchange in a 5-year period. In this research, the Kolmogorov–Smirnov test was the statistical method used to examine the normal distribution; also, the Pearson's correlation coefficient test at the confidence level of 95% was used to investigate the hypotheses. The results obtained from this study show that there is a significant relationship between the Tobin's Q ratio and criteria of "earnings per share", "market price of shares to their book value of equity", and "return on equity" during the 5-year period of this research as well as there is no significant relationship between the Tobin's Q ratio and ratios of "price to earnings per share" and "return on total assets".

## INTRODUCTION

The advancement of science and technology and the industrial revolution caused human relations, especially their economic and trade relations to enter a new phase and companies quickly grow and become larger economic units. The growth and development of companies created a lot of complexity in the way of running them and caused the owners to entrust the executive management to professional and selected managers and do duties such as defining the executive objectives and policies of the company and monitoring managers themselves. The separation of ownership from management created conflicts of interest between the two groups and the owners concerned whether managers move in the interests of them or whether they have good performance in optimal allocation of resources or not? Hence, owners have always sought to evaluate the performance of managers. In addition to owners, evaluating performance has been one of the topics of interest to different classes such as creditors, government, and even the managers themselves. So evaluating the performance of managers is of utmost importance. There are various criteria used to evaluate the performance of managers. However, these criteria are not free from difficulty and are always criticized; so attempts have been made to eliminate defects, which have led to proposing new criteria. Since stakeholders are always looking for criteria to show the performance of managers in the best way possible, efforts are still ongoing to achieve the best performance evaluation criteria. The growth and development of joint stock companies over time led to the emergence and increase of a stratum of capital owners who are not directly involved in the management of companies and guide and supervise the affairs of it through the selection of board. Also, the growth and development of joint stock companies caused the separation of ownership from management to be raised; in other words, management was a representative of owners and monitored their assets activities and reported to them about operation and management of their assets. With the enlargement of companies, people turned to investment in these companies to get involved in the ownership of large economic units. The majority of people gave their low capital to joint stock companies and in return received interest; in fact, they sought to maximize their wealth (Kavoosi, 2003). Although considering the above issue, it is assumed that in the above relationship, both sides try to maximize their own interests, the representative may not always move in the direction of maximizing the owner's interests and only may maximize its own interests or not have good

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performance in optimal allocation of resources. In the past and for many years, economists assumed that all groups related to a joint stock company work for a common goal but in the last 30 years, many cases of conflict of interests between groups and how companies deal with these conflicts have been discussed by economists (Jensen and Meckling, 1976), which has led to the argument that there is a conflict of interest between owners and managers as a representative of the owner. Conflict of interest concerns the owners (shareholders) insofar as they have to evaluate the performance of managers to ensure the optimal allocation of resources by them. On the other hand, in addition to maximize their own interests, managers have always been trying to ensure owners that their decisions are made in the interests of owners (Kavoosi, 2003). In addition to what discussed, assessing and measuring the performance of each organization helps to identify the optimal level of performance, bottlenecks and problems. Owners apply different tools and criteria to evaluate the performance of managers. At any period of time, certain measures have been proposed but stakeholders, to evaluate the performance of managers, have selected and used the criteria based on their view. Due to the flaws of traditional criteria used for performance evaluation, many attempts have been made to eliminate the defects, which have led to the emergence of new criteria. So owners always are looking for criteria by which they evaluate the performance of managers in the best way possible.

**The research importance and necessity**

Shareholders are always looking for ways to assess the performance of managers in creating wealth for the company and the estimate of future performance; however, it can be seen in action that they use inappropriate information and criteria for judging the performance of managers (Namazi, 2005). The lack of appropriate criteria for evaluating performance as well as the lack of value creation for shareholders causes the stock price of companies not to be close to their true value, because this usually leads to losses of a group of purchasers (purchasers of shares) and profits of other group. In addition, to maximize shareholders' wealth, there is no compensation for managers' services in proportion to their actual performance and this causes a gap between the interests of managers and shareholders and problems of conflict of interests between the representative and the owner (Jahankhani and Zarif Fard, 1995).

Due to the following reasons, traditional criteria of performance evaluation are not able to assess the actual performance of companies:

1- Neglecting the cost of financing through equity;
2- Having a retrospective view;
3- Disregarding intangible assets and intellectual capitals involved in the process of value creation in companies;
4- Ignoring the effects of decisions and future events such as access to new markets and new production technology, innovation of new products, labor strikes, and enacting new laws and regulations;
5- Relying on the inhibitory principle of conservatism based on which in financial reporting, pessimism has been seen better than optimism;
6- And the ability of large manipulation through using different methods of accounting earnings management (Zeraatgari, 2007).

For this reason, investors, especially shareholders need criteria to properly measure management performance and use them as an appropriate base for payment management and compensation systems and increase their motivation and identification of optimal performance, bottlenecks and problems. In this regard, the Tobin's Q ratio as a new measure of performance evaluation is able to give the answer to shareholders to what extent the management has been involved in increasing their wealth. Considering the issues discussed so far and on the condition that there is a significant relationship between the Tobin's Q ratio and criteria of "market price of shares to their book value of equity or price-to-book value (P/B)", "price to earnings (P/E)", "return on equity (ROE)" and "return on total assets (ROA)", the Tobin's Q ratio can be used as an alternative to these criteria for performance evaluation.

## THE RESEARCH LITERATURE

**Studies outside Iran**

Tobin (1969), to assess the profitability of investment projects, used the ratio of market value to book value of the investment, that the ratio is known as Tobin's Q index (simple Tobin's Q ratio). His goal was to establish a causal relationship between Q index and the amount of investment made by the company. He believed that if Q index is calculated to be greater than one, there's plenty of incentive to invest; in other words, a high Q ratio usually suggests valuable investment opportunities and growth of the company. If the Q ratio is lower than one, the investment will be stopped. He then stated that the performance of companies can be measured better using this ratio.

Salinger (1984) in a study as "the relationship between concentration and profitability" used the Q index as a measure of monopoly power and assessment of the relationship between market structure and profitability of companies. One result of this research is that the Tobin's Q ratio is the best criterion to measure the monopoly power of a company.

Morck, Shleifer, and Vishny (1988) used the Tobin's Q as a measure to evaluate and test the impact of ownership on the performance of companies. In the same year, Birger and Cynthia in a study as "Tobin's Q and the importance of focus in firm performance" also investigated the Tobin's Q ratio and found the use of this criterion useful to evaluate the performance of companies.

Lang and Litzenberger (1989) used the Tobin's Q ratio as a part of their analysis to assess the impact of dividend changes on stock prices.

Lang, Stoles, and Walking (1989 and 1991) used the Tobin's Q ratio as an index to test the relationship between management performance and resources resulting from participation in tender offers and the free cash flow hypothesis.

Also, Opler and Titman (1993) used the Tobin's Q ratio as an index for investment opportunities to test the amount of shares purchased.

Lang and Stoles (1994) investigated the relationship between the Tobin's Q ratio and investment opportunities and concluded that if the ratio is calculated to be greater than one, the company has more investment opportunities.

Dennis et al. (1994) used the Tobin's Q ratio as an index to assess dividend changes on stock prices; in the same year, Liyod and Jahra also used the Tobin's Q ratio to analyze the relationship between changes in capital structure and the performance of companies.

Steven B. Perfect and Kenneth W. Wales (1994) in a study as "alternative constructions of Tobin's Q" investigated the Tobin's Q ratio as an index to measure the performance of companies. Also, they studied different versions of Q. The results of this study showed that median, mean, and standard deviation estimates of current versions of Q are somewhat equal to each other.

Berger and Ofek (1995) used the Tobin's Q ratio to analyze the relationship between capital structure and the performance of companies. Also, Yermack (1996) used Tobin's Q to investigate the relationship between the size of the board and the performance of companies.

Leewillen and Badernat (1997) provided a new and somewhat altered pattern of Q. In the same year, Loderer and Martin in a study as "the relationship between ownership and firm performance" also used the Tobin's Q for performance measurement.

Demsetz and Villalonga (2000) conducted a study as "ownership structure and firm performance". They considered firm performance as the dependent variable in their study and measured it using the Tobin's Q index. The results of this study indicated that there is no significant statistical relationship between ownership structure and firm performance. Also, their findings were consistent with the view that the spread of ownership gives rise to agency problems, but increased income from property development compensates the agency problems.

Sevilla (2001) assessed Tobin's Q as a criterion to measure the performance of multinational corporations. The results of this study showed that companies whose Tobin's Q is higher than one enjoy better performance.

Gugler and Yurtoglu (2003) in an article as "average Q, marginal Q and the relationship between ownership and performance" discussed about measuring the performance of management using the average ratios such as ROA and Tobin's Q. These researchers believed that mean is not a suitable criterion for measuring performance, because:

1- In calculating the mean, outliers are removed; so it is less than ideal for being used to test hypotheses related to management behaviors.

2- Using the mean for performance measurement requires setting a structural model of determinants; but such a model does not exist.

Hence, they suggested using a ratio achieved from division of the company's investment returns by the cost of capital to accurately measure the performance of managers. They called the ratio "marginal Q".

Harney and Tower (2003) tried to predict the stock return using Tobin's Q and P/E ratios. The results of this study were consistent with the results of studies conducted by Smith and Wright (2000) and different from the results of a study conducted by Shiller (2000). The results of this study showed that the Tobin's Q ratio is more reliable than the P/E ratio in predicting real rate of return.

Wolf (2003) in an article as "Tobin's Q as an index of performance evaluation" investigated the Tobin's Q ratio. According to this study, among various economic indices for the assessment of firm performance, the Tobin's Q ratio can be used to evaluate a company's efficiency in investment.

Arcelus et al. (2005) examined the relationship between the company's accounting return on investment (ROI) and its economic return measured by Tobin's Q. The results of this study contrasted with a study that was conducted in 1995 by Shapiro and Landsman who claimed that ROI has a descriptive role for Tobin's Q and there is completely a

linear relationship between them, but the findings of Arcelus et al. showed a non-linear relationship between these two criteria (Q and ROI).

**Studies inside Iran**

Kavoosi (2003) investigated the relationship between the Tobin's Q ratio and economic value added (EVA) of companies listed on the Tehran Stock Exchange in 1998-2001. The results of this study showed that there is a significant relationship between the Tobin's Q ratio and EVA.

Karimi (2006) investigated the relationship between changes in market value added (MVA) and EVA and the Q index in companies listed on the Tehran Stock Exchange. The results of this study show that both criteria of EVA and Q index are able to explain MVA and evaluate the performance to identify the value created in the market and changes in shareholders' wealth; in addition, they are able to substitute for one another.

Razaziani (2007) studied the relationship between accounting and market criteria in evaluating the performance of companies listed on the Tehran Stock Exchange in 2001-2005. The results of this study showed that in companies with high, average, and low growth, there is a positive and significant relationship between "the ratio of operating profit and return on equity" and Tobin's Q as well as between "the ratio of operating profit and return on equity" and stock returns.

Zeraatgari (2007) investigated the application of the Tobin's Q and the comparison between Tobin's Q and other performance evaluation criteria in companies listed on the Tehran Stock Exchange. The results of this study showed that there is a significant relationship between the Tobin's Q ratio and criteria of stock price and earnings per share; however, there is no significant relationship between the Tobin's Q ratio and "quick and current ratios, operating profit, sales, asset turnover ratio, the growth of sales, and profit growth".

**The research objectives**

The present research aims to discover the correlation between traditional criteria of performance evaluation such as "price to earnings (P/E)", "earnings per share (EPS)", "market price of shares to their book value of equity or price-to-book value (P/B)", "return on equity (ROE)" and "return on total assets (ROA)" and the Tobin's Q ratio as a new criterion of performance evaluation; that in the case of any correlation between the traditional criteria and the Tobin's Q ratio, the Q ratio can be used as an alternative to these criteria for performance evaluation.

**The research hypotheses**

1- There is a significant relationship between the Tobin's Q and price to earnings (P/E) ratios.
2- There is a significant relationship between the Tobin's Q and earnings per share (EPS) ratios.
3- There is a significant relationship between the Tobin's Q and price-to-book value (P/B) ratios.
4- There is a significant relationship between the Tobin's Q and return on equity (ROE) ratios.
5- There is a significant relationship between the Tobin's Q and return on total assets (ROA) ratios.

**The research variables**

**The independent variable**

Here, the ratios of "price to earnings (P/E)", "earnings per share (EPS)", "market price of shares to their book value of equity or price-to-book value (P/B)", "return on equity (ROE)" and "return on total assets (ROA)" have been considered as the independent variables of the research.

**The dependent variable**

In this research, the Tobin's Q ratio has been considered as the dependent variable.

## THE RESEARCH METHODOLOGY

Based on the purpose of this study, it is an applied research which has been conducted using a causal-comparative approach and information from the past; on the other hand, the research is a correlational study in terms of the method. The information required to test the research hypotheses are among the second class information of samples companies, which has been extracted from various sources such as the CD of financial information of companies listed on the Tehran Stock Exchange (provided by Exchange Information Company) and the websites of www.seo.ir and www.rdis.ir.

**The research statistical population and sample**

The research population consists of all companies listed on the Tehran Stock Exchange in 2005-2009, which should at least have the following conditions:

- Companies' fiscal year should end on March 20;
- Their shares should be in the stock market during the years under study;
- Companies must not have changed their fiscal year during the period under study;
- The companies' information should be accessible;
- And their operations must not have been interrupted.

Considering the above restrictions, 91 companies were selected as the statistical population. Using the Cochran's sample size formula, the size of statistical sample has been calculated as follows:

$$n = \frac{Nt^2 p(q)}{Nd^2 + t^2 p(q)} \qquad n = \frac{91(1.96)^2.5(.5)}{91(.05)^2 + 1.96^2.5(.5)} = 74$$

N = the statistical population which is reported equal to 91.
t = percentile of the standard normal distribution which is equal to 1.96 in this research.
P = it is considered to be 0.5 to achieve the maximum sample size.
q (1-p) = it is considered to be 0.5.
d = absolute error which is equal to 0.05.
Accordingly, the sample size for this research is obtained equal to 74 companies.

**The period of investigation**

Here, the period under study includes 5 years from 2005 to 2009.

**The data collection method**

In this study, the library method has been used to gather the required data. Accordingly, the data required for theoretical foundations were gathered through studying Persian and Latin books and specialized journals. Also, to test the research hypotheses, the required data related to sample companies were collected through visiting the Tehran Stock Exchange and extracting the required information from the financial statements, explanatory notes, weekly reports, and annals and magazines of Stock Exchange.

**The data analysis**

**Statistical methods used in the research**

In inferential statistics, the hypotheses have been tested using the Kolmogorov–Smirnov test along with statistics relating to the measurement of the normal distribution. In addition, the Pearson's correlation coefficient test has been used to measure the hypotheses. The extracted data were firstly arranged in the Excel software and then analyzed by the SPSS software.

**The statistical methods**

Here, two statistical methods have been used to analyze data and test the research hypotheses:
1- **The first part**: descriptive statistics including the mean and standard deviation
2- **The second part**: inferential statistics including:
A) The default test: testing the normality of the population distribution
B) The main test: the Spearman's nonparametric correlation coefficient
The reason for using the Spearman's correlation coefficient is that the population distribution is not normal; hence, the Spearman's correlation coefficient which is equal to the Pearson's nonparametric correlation coefficient has been used to examine the relationship between non-normal variables.

**The results of testing hypotheses**

**The first hypothesis:** There is a significant relationship between the Tobin's Q and price to earnings (P/E) ratios.
To test the hypothesis, firstly, it is statistically expressed:

$H_0$=ρ(X,Y) There isn't a significant relationship between the Tobin's Q and price to earnings (P/E) ratios.
$H_1$≠ρ(X,Y) There is a significant relationship between the Tobin's Q and price to earnings (P/E) ratios.

At this stage, the hypotheses are tested separately for each year. Table 1 shows the information.

**Table 1: The Spearman correlation coefficient for review between the Tobin's Q and price to earnings (P/E) ratios.**

| | 2005 | 2006 | 2006 | 2007 | 2008 |
|---|---|---|---|---|---|
| **n** | 74 | 74 | 74 | 74 | 74 |
| **ρ(X,Y)** | 0.22 | 0.13 | -0.01 | -0.05 | 0.07 |
| **P-Value** | 0.06 | 0.23 | 0.87 | 0.64 | 0.52 |
| **Test result** | Confirm $H_0$ | Confirm $H_0$ | Confirm $H_0$ | Confirm $H_0$ | Confirm $H_0$ |

Based on the evidence collected, the first hypothesis is rejected. The results obtained from testing the hypotheses of this research show that there is no correlation between the Tobin's Q and price to earnings (P/E) ratios during 2005-2009.

**The second hypothesis:** There is a significant relationship between the Tobin's Q and earnings per share (EPS) ratios.

To test the hypothesis, firstly, it is statistically expressed:

$H_0$=ρ(X,Y) There isn't a significant relationship between the Tobin's Q and earnings per share (EPS) ratios.

$H_1$≠ρ(X,Y) There is a significant relationship between the Tobin's Q and earnings per share (EPS) ratios.

At this stage, the hypotheses are tested separately for each year. Table 2 shows the information.

**Table 2: The Spearman correlation coefficient for review between the Tobin's Q and earnings per share (EPS) ratios.**

| | 2005 | 2006 | 2006 | 2007 | 2008 |
|---|---|---|---|---|---|
| **n** | 74 | 74 | 74 | 74 | 74 |
| **ρ(X,Y)** | -0.67 | -0.65 | -0.70 | -0.68 | -0.69 |
| **P-Value** | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| **Test result** | reject $H_0$ | reject $H_0$ | reject $H_0$ | reject $H_0$ | reject $H_0$ |

Based on the evidence collected, the second hypothesis is confirmed. The results obtained from testing the hypotheses of this research show that there is a correlation between the Tobin's Q and earnings per share (EPS) ratios during 2005-2009.

**The third hypothesis:** There is a significant relationship between the Tobin's Q and price-to-book value (P/B) ratios.

To test the hypothesis, firstly, it is statistically expressed:

$H_0$=ρ(X,Y) There is a significant relationship between the Tobin's Q and price-to-book value (P/B) ratios.

$H_1$≠ρ(X,Y) There is a significant relationship between the Tobin's Q and price-to-book value (P/B) ratios.

At this stage, the hypotheses are tested separately for each year. Table 3 shows the information.

**Table 3: The Spearman correlation coefficient for review between the Tobin's Q and price-to-book value (P/B) ratios.**

| | 2005 | 2006 | 2006 | 2007 | 2008 |
|---|---|---|---|---|---|
| **n** | 74 | 74 | 74 | 74 | 74 |
| **ρ(X,Y)** | 0.28 | 0.32 | 0.29 | 0.26 | 0.32 |
| **P-Value** | 0.013 | 0.005 | 0.010 | 0.022 | 0.005 |
| **Test result** | reject $H_0$ | reject $H_0$ | reject $H_0$ | reject $H_0$ | reject $H_0$ |

Based on the evidence collected, the third hypothesis is confirmed. The results obtained from testing the hypotheses of this research show that there is a correlation between the Tobin's Q and price-to-book value (P/B) ratios during 2005-2009.

**The fourth hypothesis:** There is a significant relationship between the Tobin's Q and return on equity (ROE) ratios.

To test the hypothesis, firstly, it is statistically expressed:

$H_0$=ρ(X,Y) There isn't a significant relationship between the Tobin's Q and return on equity (ROE) ratios.

$H_1$≠ρ(X,Y) There is a significant relationship between the Tobin's Q and return on equity (ROE) ratios.

At this stage, the hypotheses are tested separately for each year. Table 4 shows the information.

**Table 4: The Spearman correlation coefficient for review between the Tobin's Q and return on equity (ROE) ratios.**

| | 2005 | 2006 | 2006 | 2007 | 2008 |
|---|---|---|---|---|---|
| **n** | 74 | 74 | 74 | 74 | 74 |
| **ρ(X,Y)** | -0.59 | -0.34 | -0.41 | -0.43 | -0.34 |
| **P-Value** | 0.001 | 0.002 | 0.001 | 0.001 | 0.003 |
| **Test result** | reject $H_0$ | reject $H_0$ | reject $H_0$ | reject $H_0$ | reject $H_0$ |

Based on the evidence collected, the fourth hypothesis is confirmed. The results obtained from testing the hypotheses of this research show that there is a correlation between the Tobin's Q and return on equity (ROE) ratios during 2005-2009.

**The fifth hypothesis:** There is a significant relationship between the Tobin's Q and return on total assets (ROA) ratios.

To test the hypothesis, firstly, it is statistically expressed:

$H_0=\rho(X,Y)$ There isn't a significant relationship between the Tobin's Q and return on total assets (ROA) ratios.

$H_1\neq\rho(X,Y)$ There is a significant relationship between the Tobin's Q and return on total assets (ROA) ratios.

At this stage, the hypotheses are tested separately for each year. Table 5 shows the information.

**Table 5: The Spearman correlation coefficient for review between the Tobin's Q and return on total assets (ROA) ratios.**

| | 2005 | 2006 | 2006 | 2007 | 2008 |
|---|---|---|---|---|---|
| **n** | 74 | 74 | 74 | 74 | 74 |
| **ρ(X,Y)** | 0.10 | 0.10 | -0.03 | -0.006 | -0.003 |
| **P-Value** | 0.89 | 0.38 | 0.78 | 0.96 | 0.98 |
| **Test result** | Confirm $H_0$ | Confirm $H_0$ | Confirm $H_0$ | Confirm $H_0$ | Confirm $H_0$ |

Based on the evidence collected, the fifth hypothesis is rejected. The results obtained from testing the hypotheses of this research show that there is no correlation between the Tobin's Q and return on total assets (ROA) ratios during 2005-2009.

**The conclusion**

Although according to statistical analyses it is concluded that there is no correlation between the Tobin's Q and the two ratios of price to earnings (P/E) and return on total assets (ROA), it does not mean that there is no relationship between these variables. In other words, statistically and based on the analyses, the researcher could not reject the null hypothesis indicating the lack of a significant relationship between the Tobin's Q ratio and the two ratios of price to earnings (P/E) and return on total assets (ROA); hence, it has been inevitably accepted; but the correlation between the Tobin's Q and the ratios of earnings per share (EPS), price-to-book value (P/B), and return on equity (ROE) is proved and the null hypothesis is rejected.

Due to the weak correlation coefficient and coefficient of determination between the Tobin's Q and "price to earnings (P/E) and return on total assets (ROA)", it can be concluded that these two ratios are weakly able to explain changes in the Tobin's Q ratio; as a result, the Tobin's Q ratio cannot be used as an alternative to these criteria for financial performance evaluation. Also, considering the results of testing hypotheses and high correlation coefficient and coefficient of determination between the Tobin's Q ratio and ratios of "earnings per share (EPS), price-to-book value (P/B), and return on equity (ROE)", it can be concluded that these ratios are highly able to explain changes in the Tobin's Q ratio. However, among these three ratios, EPS and P/B respectively have the highest and lowest ability to explain the Tobin's Q changes; thus, the Tobin's Q ratio can be used as an alternative to these criteria for financial performance evaluation. The results regarding the relationship between the Tobin's Q ratio and earnings per share (EPS) are consistent with results of the study conducted by Zeraatgari (2007) and the results regarding the relationship between the Tobin's Q ratio and return on equity (ROE) are consistent with results of the study conducted by Razaziani (2007).

**The research limitations**

1- Due to the lack of adequate and reliable information for some companies, some of them were removed from the population.

2- Only few companies have regularly published midterm reports; so, assessing the periods less than one year has been inevitably neglected.

**The practical suggestion of the research**

1- To prevent irregular stock price changes of some companies, which lead to earning abnormal profits through information rent of some major shareholders, it is recommended to the Tehran Stock Exchange to make companies provide clear and timely information about the causes of their excessive share prices and prevent the losses of many retail investors.

2- Investors in Tehran Stock Exchange are recommended not to stop at stock prices in their decisions and take into consideration other performance evaluation criteria. Besides the other criteria, they can find the Tobin's Q ratio a useful performance measure to get help for proper decision-making.

3- The Tehran Stock Exchange should require companies to provide new ratios such as Tobin's Q for users along with other financial reports.

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